ABSTRACT

INTRODUCTION

Stroke is one among the primary etiology of death and disability in the world. Types of stroke are cerebral infarction, primary intracranial haemorrhage, non-traumatic subarachnoid haemorrhage, miscellaneous dural sinus / cerebral vein occlusion. Ischaemic stroke is the commonest type of stroke accounting for 80-90% of all strokes. Objective of stroke imaging is to assess the parenchyma, extra cranial and intra cranial circulation. It aids in detection of intracranial haemorrhage, differentiating salvageable tissue from infarcted tissue, identifying intravascular thrombi, selecting appropriate therapy and predicting the clinical outcome.

AIMS AND OBJECTIVES

To evaluate the role of MRI in the assessment of stroke, the territory of the involved intracranial blood vessels and MR spectroscopy finding in ischemic stroke.

MATERIALS AND METHODS

This study is a cross-sectional study carried out in the Department of Radiodiagnosis, Sree Mookambika Institute of Medical Science, Kulasekharam, Kanniyakumari (District), Tamil Nadu over a period of 18 months (Dec 2016 – June 2018). It included 55 consenting patients of all age groups irrespective of sex, clinically suspected of stroke who were referred for MRI evaluation of brain. Patients not consenting for study. Patients with history of surgical metallic implants, pacemaker placement, aneurysm clipping, prosthetic valve implantation, intracranial tumours and history of claustrophobia were excluded. MRI brain scans were

performed on a 1.5T Siemens ESSENZA 16 channel, using head coil. Standard stroke protocol sequences like T1W, T2W, FLAIR, DWI, GRE, 3D TOF MR Angiography and MR Spectroscopy were performed and findings were correlated for the study.

RESULTS

55 patients with clinical diagnosis of stroke were subjected to MRI study of the brain. Among them 44 (80%) suffered from infarction; 6 (10.91%) suffered from haemorrhage; 5 (9.09%) suffered from stroke mimics like Sub arachnoid haemorrhage and CVT. Predominant risk factors were hypertension and diabetes mellitus. MCA territory (Left>Right) was the commonest territory involved followed by PCA in patients with cerebral infarction. DWI was more sensitive than conventional MRI sequences in identifying acute infarcts. Basal ganglia was the most common site of intra parenchymal haemorrhage followed by thalamus. CVT was the most common stroke mimic. On MR spectroscopy, NAA was decreased compared to contralateral normal side in all patients with acute infarct. Lactate peak was observed in the core of the infarcted tissue in all cases of acute infarct.

CONCLUSION:

MRI is a non-invasive modality. There is no risk of ionizing radiation hazard. Subtle lesions can be identified in MRI due to its superior grey - white matter resolution. The results of our study is on par with the results of national, international stroke surveys and with studies done by eminent authors.